

88596

Study of the Resistivity of Nickel -
Palladium Alloys in the Temperature Range
From 0 to 700°C

S/078/60/005/011/007/025
B015/B060

temperature coefficients. The author thanks R. G. Annayev for having
proposed the subject and for his guidance. There are 7 figures, 5 tables,
and 4 references; 3 Soviet and 1 US.

ASSOCIATION: Turkmenskiy gosudarstvennyy universitet im. A. M. Gor'kogo
(Turkoman State University imeni A. M. Gor'kiy)

SUBMITTED: July 8, 1959

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88597

S/078/60/005/011/008/025
B015/B060

18.8100

AUTHOR: Yazliyev, S.

TITLE: Study of the Thermoelectrical Properties of Nickel -
Palladium Alloys

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 11,
pp. 2446-2457

TEXT: An abridged reproduction of the article under consideration was submitted to the editors of the periodical "Izvestiya AN Turkmeneskoy SSR". A change in properties of alloys, with special regard to thermoelectric properties with a change in composition, or of the phase condition of the alloy, had already been investigated in papers by V. A. Nemilov et al. (Ref. 4), Ya. G. Dorfman and R. I. Yanus, K. V. Grigorov, M. G. Chernikhovskiy (Ref. 7), and others. It had been noted that a magnetic transformation of nickel and iron takes place with an abrupt change of Thomson's electromotive force. M. M. Temkin and A. V. Khoroshin (Ref. 11) showed that the absolute thermal electromotive force (thermo-emf)

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actually constitutes the entropy of the moving carriers, and thus, Thomson's electromotive force is the specific heat of the carriers. In the work under consideration, the author for the first time determined the integral E , the differential e , and the absolute \mathcal{E} thermo-emf, as well as the thermoelectric potential π and Thomson's electromotive force σ of nickel - palladium alloys at 0 to 1000°C. 12 specimens of various composition (Table 1) were studied. The specimens were drawn to wires, and the value E was determined by a method suggested by A. A. Rudnitskiy (Ref. 12). The thermo-emf was measured with the aid of a ППТН-1 (PPTN-1) potentiometer. The determinations of the values \mathcal{E} show (Table 2, Fig. 2) that at all temperatures it has a minimum at about 10-20 at% Pd and a maximum at 74-75 at%. The value e uniformly changes with temperature up to the Curie point (Fig. 4, Table 3) to form a marked maximum at the Curie point. The Curie point drops with the concentration of Pd in the alloy. The changes in the values \mathcal{E} and π with temperature (Tables 4, 5, Fig. 6) evolve in a similar manner as those of e . The values for σ (Table 6, Fig. 10) rise with temperature up to the Curie point, then form an abrupt peak and drop. All thermoelectric properties of the Ni-Pd

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alloys thus in the main vary uniformly as a function of the composition, according to such curves as are characteristic of a continuous series of solid solutions. For all Ni-Pd alloys the value of thermo-emf is negative, i.e., the alloys have a predominantly electronic conductivity. The magnetic transformation of Ni-Pd alloys is typical of a phase transformation of the second order. The work under consideration was carried out under the supervision of R. G. Annayev. A paper by A. T. Grigor'yev is mentioned. There are 11 figures, 6 tables, and 21 references: 13 Soviet, 1 US, 2 British, and 5 German.

ASSOCIATION: Turkmenskiy gosudarstvennyy universitet im. A. M. Gor'kogo
(Turkoman State University imeni A. M. Gor'kiy) X

SUBMITTED: July 8, 1959

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24.2200

29385

S/202/61/000/005/001/004
A006/A101

AUTHOR: Yazlivev, S.

TITLE: On magnetostriction of alloys of the nickel-palladium system in longitudinal and transverse magnetic fields

PERIODICAL: Akademiya nauk Turkmenskoy SSR. Izvestiya. Seriya fiziko-tekhnicheskikh, kikhimicheskikh i geologicheskikh nauk, no. 5, 1961, 14-20

TEXT: The investigation of magnetostriction of binary ferromagnetic alloys with non-ferromagnetic components, such as palladium alloys with nickel, is of considerable interest for revealing the part of magnetic interaction of atoms in the lattice of these alloys. To complete lacking literature data in this field the author studied the longitudinal and transverse magnetostriction of nickel-palladium alloys in a wide concentration range. The investigation was made with 14 specimens of the following composition:

Atomic .	Pd	0	10	20	25	30	40	50	60	70	74	75	76	80	90
%	Ni	100	90	80	75	70	60	50	40	30	26	25	24	20	10

The initial components of the alloys were domestic electrolytic nickel and refined

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On magnetostriction of alloys of ...

palladium. The alloys were melted in a high frequency furnace under a flux layer. To investigate magnetostriction, disks were made, of 14 mm in diameter and 1.5 - 2 mm thickness. Prior to the measurements, the disks were vacuum-annealed under the following conditions: heating to 900°C for 1 hour; cooling with the furnace down to 400°C at 150°C/hour; holding at 400°C for 50 hours continuously; cooling down to room temperature at 30°C/hour. Magnetostriction was measured with the aid of wire tensometers first employed by N. S. Akulov and D. I. Volkov (Ref. 5: Akulov, N. S., Volkov, D. I. - A new method of measuring magnetostriction. Vestnik Moskovskogo universiteta, no. 10, 1949). The tensometers were glued onto the disk surfaces which were placed in the electromagnetic field with the aid of a special device directing the specimen through any angle in respect to the field. The measurements were made at room temperature. The investigation leads to the following results and conclusions: The second rule of even effects by N. S. Akulov in a wide concentration range (up to 40 at.% Pd) is confirmed for alloys of the nickel-palladium system by formula (2): $\lambda_{II} = -2$ i.e. longitudinal magnetostriction at saturation (λ_{II}) is twice as high as transverse magnetostriction (λ_{\perp}) and has an opposite sign. The effect of para-process on the course of longitudinal and transverse magnetostriction curves in the nickel-palladium system is established. Near the composition of 75 at.% Pd

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On magnetostriction of alloys ...

a relatively abrupt change in the course of magnetostriction curves is observed, proving the presence of superstructural transformations in the nickel-palladium system. At low palladium concentrations (up to 30-40% Pd) the experimental data obtained are well described by formula (3):

$$\alpha_{S,AB}^{(T)} = \alpha_{S,AO}^{(0)} \left(1 - \frac{T}{\Theta}\right) + a B = \alpha_{S,AO}^{(T)} + a B, \quad (3)$$

In the equation (3) $\alpha_{S,AO}^{(0)}$ and $\alpha_{S,AO}^{(T)}$ are the values of the even effect at saturation for a pure component A at absolute zero and temperature T correspondingly; $\alpha_{S,AB}^{(T)}$ is the magnitude of the even effect (magnetostriction, galvanomagnetic effect and others) at saturation for a bi-component alloy AB at temperature T; B is the composition of the second component, Θ is the Curie point, a is the constant coefficient determined from the experiment. The author thanks R. O. Annayev, Academician of the AN Turkmenian SSR under whose supervision the investigation has been carried out. There are 2 tables, 4 figures and 9 Soviet-bloc references.

ASSOCIATION: Turkmenskiy gosudarstvennyy universitet im A. M. Gor'kogo (Turkmenian State University imeni A. M. Gor'kiy)

SUBMITTED: February 18, 1961

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2417600 (1167, 1137)

30923
S/202/61/000/006/002/004
A006/A101

AUTHOR: Yazliyev, S.

TITLE: Temperature dependence of the galvanomagnetic effect in nickel-palladium alloys

PERIODICAL: Akademiya nauk Turkmenskoy SSR, Izvestiya, Seriya fiziko-tekhnicheskikh, khimicheskikh i geologicheskikh nauk, no. 6, 1961, 33 - 38

TEXT: The temperature dependence of the galvanomagnetic effect in the Ni-Pd system was until the present not sufficiently studied. Therefore the author investigated this dependence in nickel-palladium alloys (from pure Ni to 76 at.% Pd) within a range from room temperature to above the Curie point. Wire specimens, 30 cm long, were used to measure the galvanomagnetic effect in a special furnace, which was power-supplied from two voltage stabilizers connected in series, to stabilize the temperature and exclude the temperature gradient along the specimen. Furthermore, the temperature was regulated with the aid of an electronic thermocontrol. The investigation shows that there is a linear dependence of the galvanomagnetic effect on temperature in Ni-Pd alloys within the Curie temperature range. This is in agreement with N.S. Akulov's equation (1)

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Temperature dependence ...

$\alpha_s(T) = \alpha_s(0) (1 - \frac{T}{\theta})$, where α_s is the value of the even effect at $T = 0^\circ\text{C}$, and $\alpha_s(T)$ at absolute temperature T . θ is Curie point. The galvanomagnetic effect in these alloys near the Curie point depends linearly on $H^{2/3}$, as described by formula (2) $(\frac{\Delta R}{R})_\theta = aH^{2/3}$, where a is constant; H is magnetic field

strength. This formula, which was for the first time presented by Potter, is based on the theory of the Weiss molecular field (Reference 5: Potter, H.H., Magneto-resistance and magneto-caloric effect in iron and Heusler alloys, Phil. Mag. vol. 13, 1932). Near a composition range corresponding to a content of 75 at.% Pd, relatively sharp changes were observed in the Curie point value and the galvanomagnetic effect. These changes are characteristic of the presence of a superstructural transformation in this composition. The galvanomagnetic effect shows a respective linear and square dependence on the field in the paraprocess range for temperatures remote and above the Curie point. This is in a qualitative agreement with the existing theory. The author thanks R.G. Annayev for the subject recommended and his supervision of the present study. There are 3 figures, 1 table and 12 references: 11 Soviet-bloc and 1 non-Soviet-bloc.

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Temperature dependence ...

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A006/A101

ASSOCIATION: Turkmenskiy gosuniversitet imeni A.M. Gor'kogo (Turkmenian State
University imeni A. M. Gor'kiy)

SUBMITTED: June 5, 1961

ix

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24,7700

S/058/61/000/010/086/100
A001/A101

AUTHOR: Yazliyev, S.

TITLE: Investigation of thermoelectric properties of nickel-palladium alloys I

PERIODICAL: Referativnyy zhurnal. Fizika, no. 10, 1961, 268, abstract 10E329
("Izv.AN TurkmSSR.Ser.fiz.-tekh., khim.i geol.n.", 1960, no.6, 17-22)

TEXT: The author investigated integral thermo-emf E , differential thermo-emf e , absolute thermo-emf ξ , thermoelectric potential \mathcal{N} and Tomson's emf σ of Ni-Pd alloys in the range 0-1,000°C. The specimens were prepared from electrolytic Ni and refined Pd and were annealed prior to measurements. The E -value was determined in couple with Pt calibrated relative to Cu. The e -magnitude was found by graphical differentiation, σ was obtained by second differentiation; ξ and \mathcal{N} were calculated. It was found out that thermoelectric properties vary smoothly as functions of the alloy composition, which is characteristic of the continuous series of solid solutions. Alloys possess electronic conductivity. The temperature of Curie-point decreases with increasing Pd content.

O. Talenskiy

[Abstracter's note: Complete translation]

Card:1/1

YAZYKOV, S.A., kand.mod.nauk

Preventive treatment in chemical burns of the esophagus. Med.
zhur. Uzb. no.1:50-52 Ja '61. (MIRA 14:6)
(ESOPHAGUS—WOUNDS AND INJURIES)

"APPROVED FOR RELEASE: 09/19/2001

CIA-RDP86-00513R001962320010-7

APPROVED FOR RELEASE: 09/19/2001

CIA-RDP86-00513R001962320010-7"

1 Cara 2/2

YAZMADZHYAN, G. O.

"Psychiatric Observations in Armenia From Ancient Times to the 11th Century."
Cand Med Sci, Yerevan Medical Inst, 22 Dec 54. (K, 12 Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher
Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

VOLEKOV, F.R.; DAVIDOV, V.I.; KIBANOV, G.A.; YAZNIK, I.

New occurrences of Cambrian fauna and flora in the Barykya
basin (western Transbaikalia). Geol. i geofiz. no.8:133-135
' 61. (MIRA 18:2)

1. Baryatskoye geologicheskoye upravleniye, Ulan-Ude.

YAZMIR, M.M.

Nature of the Lower Cambrian bioherms on the banks of the middle
Aldan River. Uch.zap. SGU 74:157-166 '60. (MIRA 15:7)
(Aldan Valley--Geology, Stratigraphic)

YAZMIR, M.M.; VIDISHCHEVA, O.P.

Tracks of Vermes in the Lower Cambrian in the region of the middle part of the Aldana River. Uch.zap. SGU 74:167-178 '60.
(MIRA 15:7)
(Aldan Valley--Worms, Fossil)

ZASLAVSKIY, N.N. [Zaslavs'kyi, N.M.]; KOSTENKO, Yu.N.; KRIKUNOV, N.I.
[Krykunov, M.I.]; MIKHAL'CHENKO, G.S. [Mykhal'chenko, H.S.];
YAZON, M.G. [IAzon, M.H.]

Use of furan plastics in the manufacture of continuous neutral-
ization apparatus. Khim. prom. no.4:31 O-D '64.

(MIRA 18:3)

ACC NR: AP6009042

(A)

SOURCE CODE: UR/CO18/65/000/011/0098/0101

AUTHOR: Malashenko, V. (Colonel); Yazov, D. (Colonel)

ORG: None

TITLE: Training for firing in the dark

SOURCE: Voyenny vestnik, no. 11, 1965, 98-101

TOPIC TAGS: ground force training, conventional warfare

ABSTRACT: The training procedures practiced by various military units in the use of firearms in the darkness of night are reviewed. In one unit, the newly entered recruits are trained separately from the experienced old-line soldiers. First, an orientation training is given recruits to familiarize them with the darkness and with determination of target positions identified by various sounds and flashes. After that, they are progressively trained to handle and load their weapons first blindfolded, then at dawn and then in the dark, aiming at both illuminated and obscure targets. The old ranker soldiers are trained in firing from moving vehicles and for attaining a higher standard of proficiency by acquiring habits for firing in the dark under various conditions and from different positions. Some practical examples of training and drilling procedures used by various commanding officers are presented including the proper handling of firearms and methods of aiming. The effect of being blinded by bright flashes and flares is mentioned,

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ACC NR: AP6009042

and the immediate aiming and firing at them is recommended. A training device used for aiming at flashing lights is described. The field exercises and the evaluation of results and final ratings are discussed. A special fire control device designed and used by one unit for controlling the aiming operations from moving vehicles is also described. The organization of training by using different types of firearms (automatic light weapons, machine guns, grenades, etc.) and the assignment of trainees to various training groups is briefly reviewed.

SUB CODE: 05, 15/ SUBM DATE: None

Card 2/2

Yazov, D. I.

1. ALEKSEYEVSKIY, N. A., Min. Eng. YAZOV, D.G., Min. Eng.
2. USSR (600)
4. Mining Engineering
7. Experience with rapid mining of rising stopes. Gor zhur. No 12 1952.
9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

YAZOVSKIKH, G.

YAZOVSKIKH, G.

Improved equipment for checking hermetic sealing of fuel system in
IaAZ-204 engines, Avt. transp. 36 no.1:34 Ja '58. (MIRA 11:1)
(Automobiles--Fuel systems)

11500 also 1160, 1454

S/128/60/000/007/009/017
A105/A033

AUTHORS: Yazovskikh, I.M. and Lesh, V.A.

TITLE: The Practice of Producing Ferrosilid Castings

PERIODICAL: Liteynoye proizvodstvo, 1960, No. 7, pp. 41-42

TEXT: This article describes the method and the results obtained in the continued struggle of the Sverdlovskiy nasosnyy zavod (Sverdlovsk Pump Plant) against ferrosilid casting rejects. Ferrosilid contains, according to ГОСТ 2233-43 (GOST 2233-43) 14.5-16.5% Si. 0.5-0.8% C, 0.30-0.80% Mn and less than 0.1% P and 0.07% S. The plant uses the green sand molding method, the castings are shaken out at 750-800°C, the inner stresses are removed by soaking the castings in annealing furnaces of identical temperatures for 2 hours and then having them to cool. After annealing the castings are cleaned and subjected to hydraulic tests at 5 atm. Among the most frequent defects are gas cavities. An analysis showed that the greater part of the gases during induction smelting is added to metal by ferrosilid. Therefore, according to the new method, only ferrosilid is subjected to pre-melting, all
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The Practice of Producing Ferrosilid Castings

S/128/60/000/007/009/017
A105/A033

other ingredients, i.e. pig iron, carbon steel, etc., are prepared as usual. This reduced the quantity of recast material and the costs and increased the productivity. Another defect occurring frequently were hot cracks. These decreased rapidly after the temperature of the furnace was raised to 1,460-1,480°C. Tests revealed that, if ferrosilid is overheated to 1,460-1,480°C during smelting, variations between 1,240-1,360°C of pouring temperature do not cause hot cracks in castings. These experiments showed that overheating of ferrosilid to 1,480°C prevents the formation of gas cavities and hot cracks. A considerable amount of rejects was caused due to cold cracks by intense partial overheating during emery cleaning. Castings are water-cooled during this process and no more cold cracks originated. A specific defect of ferrosilid castings was fine kish which appeared after final abrasion. This was due to the displacement of carbon by silicon. It was established that at an amount of 0.60% C (at 15-15.5% Si) there are no rejects due to kish. Less than 0.55% C increases the brittleness of castings. The work carried out in respect to new smelting method for ferrosilid, determination of the necessary quantities of carbon (0.55-0.60%) and water cooling of castings during emery cleaning aided to decrease the amount of rejects caused by

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The Practice of Producing Ferrosilid Castings

S/128/60/000/007/009/017
A105/A033

gas cavities, kish, hot and cold cracks.

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S/184/62/000/006/007/008
D040/D112

AUTHORS: Yazovskikh, I.M., Boychenko, A.S., and Lesh, V.A.,
Engineers

TITLE: The effect of carbon content and pouring temperature on
the formation of hot cracks in Kh28 alloy castings

PERIODICAL: Khimicheskoye mashinostroyeniye, no.6, 1962, 29-30

TEXT: Means have been found to eliminate hot cracks in X 28 (Kh28) alloy castings. The alloy composition in the described experiments was (in %): 0.52-1.09 C, 26.25-28.16 Cr, 0.62-1.19 Si, 0.56-0.69 Mn, 0.018-0.037 P, 0.024-0.029 S. Kh28 is very prone to internal cracks, and foundries are sometimes compelled to use scarce and expensive nonferrous alloys instead. The experiments showed that the cracking tendency rose abruptly with rising C content, and that higher pouring temperature reduced this tendency but caused grain growth spoiling the mechanical properties of the metal. Addition of a mixture of equal amounts of 75-percental ferrosilicon and ferrotitanium, the quantity being 0.80 - 0.60% of the liquid metal's

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The effect of carbon content

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EO40/D112

weight, into the furnace spout eliminated the temperature effect. Check of results at the Sverdlovskiy nasosnyy zavod (Sverdlovsk Pump Plant) showed that cracks were entirely eliminated in pump casings and greatly reduced in nipples when the C content in Kh28 alloy was kept at 0.5-0.65% and the pouring temperature at 1590-1600°C. There is 1 figure and 2 tables.

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L 10398-63

EWP(q)/EWT(m)/BDS--AFFTC/ASD--JD

ACCESSION NR: AP3002249

S/0128/63/000/006/0010/0012

AUTHOR: Yazovskikh, I. M.; Gorbachev, I. M.; Bukin, Yu. A.

TITLE: Heat-resistant Cr-Mn steel for cast furnace parts

SOURCE: Liteynoye proizvodstvo, no. 6, 1963, 10-12

TOPIC TAGS: Cr-Mn steel, heat-resistant steel, fluidity, hot cracking susceptibility, oxidation resistance, mechanical properties, applications

ABSTRACT: The Chelyabinsk NIPTIAMASH has developed a nickelfree heat- and oxidation-resistant Cr-Mn steel for cast parts of furnaces working at 800--1100C. The best combination of mechanical properties was obtained in as-cast (not heat-treated) steel containing 0.55--0.65% C, 2.0--2.5% Si, 15--17% Mn, 15--17% Cr, and 0.30--0.60% Ti, deoxidized in a ladle with 0.2% Al and poured at 1500C. Mechanical properties of Cr-Mn steel at 20, 800, and 950C compared with those of Cr-Ni steels Kh18N9L [cast AISI-302] and Kh18N20S2I [cast, 18% Cr, 20% Ni, 2% Si] are shown in Table 1 of Enclosure. Oxidation resistance of Cr-Mn steel up to 800C is lower than Cr-Ni and Cr-Ni-Si steels, but with temperature increased to 950C the difference diminishes. Castability of the new steel is better and susceptibility to hot cracking lower than those of Cr-Ni and Cr-Ni-Si steels.

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YAZOVSKIKH, I.M.; BUKIN, Yu.A.; GORBACHEV, I.M.

Effect of deoxidizers on the mechanical properties of low-alloy
steel. Lit. proizv. no.10:3-4 0 '63. (MIRA 16:12)

... ..

Card

1/1

YAZOVSKIKH, M. N.

Electric Contactors

Transferring the power supply of contactor
KTR's switch-in coil from a voltage transformer
to a power transformer, switched in by the same
contactor. Torf. prom., 29, No. 7, 1952.

Monthly List of Russian Accessions Library of Congress October 1952 UNCLASSIFIED

YAZOVTSNV, D.

The growing number of cattle will be provided with buildings. Sel'.
stroil. 12 no.8:7-8 Ag '57. (MIRA 10:9)

1. Predsedatel' kolkhoza imeni 1-go Maya Ichalkovskogo rayona, Mordovskoy ASSR.

(Mordovia--Farm buildings)

YAZVIKOV, G., inzhener.

**Trestle with a mobile bin. Stroitel' 2 no.8:14 Ag '56. (MLRA 9:12)
(Concrete construction--Formwork)**

YAZVIKOV, G.P., inzhener.

Efficiency workers of the building project no.27 of the Ministry
of Construction industry of the U.S.S.R. Nov. tekhn. i pered. op.
v stroi. 18 no.9:30-32 S '56. (MLRA 9:10)

(Building machinery)

AUTHOR: Yazvikov, G.P., Engineer

100-9-10/11

TITLE: Small Pump Dredge (Malyy zemlesosnyy snaryad)

PERIODICAL: Mekhanizatsiya Stroitel'stva, 1957, No. 9,
p. 26 (USSR).

ABSTRACT: The dredge is illustrated in Fig.1. It was designed by novozhilov and comprises a 106 mm continuous screw which rotates in the body of the dredge. A hose is attached to the 50 mm diameter outlet. The screw is operated by a flexible shaft of the same type as that used in the vibrator V-21. The inlet is protected by a mesh with 12 mm openings. A drilling head is attached to the front of the shaft; this helps to break up the solid ground. The dredge weighs 40 kg (including the dynamo and the frame). Investigations carried out during 1956 showed that 1 m³ of soil pulp was washed out in 2.2 minutes. This pulp contained 15% of solids when the discharge pipe was run uphill 1 m, i.e. 4 m³ of soil was washed out per hour. When the discharge pipe had to negotiate a difference in level of 4 m, only 3 m³ of soil was washed out per hour. The No. 27 Building Trust has used this dredge and obtained satisfactory results. The dredge is used, in general for clearing flooded trenches. There are 2 figures.

AVAILABLE: Library of Congress

Card 1/1 1. Dredges-Design 2. Dredges-Applications

YAZVIKOV, G.F., inzh.

Device for cutting banks while digging trenches with rotary
excavators. Nov.tekh. i pered. op. v stroi. 19 no.12:27 D '57.
(MIRA 11:1)

(Excavating machinery)

SHKURKO, V.I.; YAZVIKOV, V.V.

Remarks on the staining of nucleic acids in cells by the methyl
green-pyronine method. TSitologiya. 6 no.3:383-384, My-Je '64.
(MIRA 18:9)

1. Kafedra gistologii Moskovskogo meditsinskogo instituta.

SHKURKO, V.I.; YAZVNIKOV, V.V. (Moskva)

Device for straightening sections obtained by means of a microtome.
Arkh.pat. 27 no.7:87 - '65. (MIRA 18:8)

1. Kafedra gistologii (zav. - prof. T.A.Grigor'yeva) II Moskovskogo
meditsinskogo instituta imeni N.I.Pirogova.

NEYMAN, M.B.; KOVARSKAYA, B.M.; YAZVIKOVA, M.P.; SIDNEV, A.I.; AKUTIN, M.S.

Destruction of condensation resins. Part 3: Thermooxidative destruction of hardened epoxy resins. Vysokom.sosed. 3 no.4:602-606
Ap '61. (MIRA 14:4)

1. Nauchno-issledovatel'skiy institut plasticheskikh mass.
(Epoxy resins)

40908

3/191/62/000/010/001/010
B101/B186

15.8250,
15.8530

AUTHORS:

Neyman, M. B., Kovarskaya, B. M., Levantovskaya, I. I., Dral-
yuk, G. V., Yazykova, M. P., Sidorov, V. A., Kochetkov, V. N.
Trossman, G. M., Tatevos'yan, G. O., Kuznetsova, I. B.

TITLE:

Stabilization of polyamide films for agriculture

PERIODICAL: Plasticheskiye massy, no. 10, 1962, 6 - 8

TEXT: Protection of polyamide films, type 54, as used in hothouses and
silos, from effects of photo- and thermooxidation was tested by trying
various additives under various test conditions. The following were added
as ultraviolet light absorbers: 2-hydroxy-4-methoxy-benzophenone (OMBF)
(OMBf) (I), 2-hydroxy-4-alkoxy-benzophenone (a mixture of benzophenones
with various alkoxy groups of the type OC_7H_{15} , OC_8H_{17} , or OC_9H_{19}) (II), and
2-hydroxy-5'-methyl-benzotriazole (Tinuvin) (III). As antioxidants, KI
and copper naphthenate and organic stabilizers of the following type were
used: 1) derivatives of aromatic amines; 2) phenol derivatives; 3) aromatic
oxamines; 4) 2,6-ditert-butyl-4-methyl-phenyl-pyrocatechin phosphite (Ionol).

Card 1/2

Stabilization of ...

S/191/62/000/010/001/010
B101/B186

Polyamide film blanks produced by condensation, namely hexamethylene adipate and ϵ -caprolactam at 260°C in an N_2 -atmosphere, were subjected to thermo- and photooxidative action. Light sources were carbon-arc and mercury-quartz lamps, type ПРК-2 (PRK-2). Temperature in the test chamber was $70 \pm 2^{\circ}\text{C}$. Thermooxidation measured by the drop in oxygen-pressure was eliminated most efficiently by the pyrocatechin esters and phenyl- β -naphthyl-amine. It was found that stabilizers of the OMBF and Tuvix types act as antioxidants. Photooxidation experiments showed the following results: in most cases the elongation at rupture dropped even on initial exposure. After 200 hrs of exposure time, breaking tenacity of both stabilized and nonstabilized films fell by approximately 20 - 25%. Ageing time until embrittlement was determined. Without an inhibitor it began after 190 hrs of exposure to the light of an arc lamp. Optimum results were obtained with pyrocatechin esters (250 hrs), KI + copper naphthenate (260 hrs) and (Santovar) O ((2,6-di-tert-butyl-hydroquinone)) (240 hrs). Different action of the light from the arc lamps and the mercury lamps was explained by spectrum differences. Further field tests are recommended. There are 3 figures and 1 table.

Card 2/2

45650

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8/191/63/000/003/005/022
B101/B186

AUTHORS: Levantovskaya, I. I., Yazvikhva, M. P., Dobrokhotova, M. K.,
Kovarskaya, B. M., Vlasova, K. N.

TITLE: Thermooxidative degradation and stabilization of some poly-
amides

PERIODICAL: Plasticheskiye massy, no. 3, 1963, 19 - 23

TEXT: This is a study of the kinetics of oxidation of polyoaproamide (I),
polyamide 68 (II) (a polycondensate of the SH salt), and copolymer 548 (III)
(polycondensate of hexamethylene diamine adipate, hexamethylene diamine
sebacinate, and ϵ -caprolactam). The decrease in oxygen pressure was deter-
mined at initial p_{O_2} = 200 mm Hg and 130 - 200°C or at 200°C and changing

p_{O_2} . The kinetic curves of oxidation were s-shaped especially at low
temperatures or low p_{O_2} . The induction period was 10-20 min. A slower
drop in pressure at a longer oxidation time is explained by liberation of
Card 1/2

Thermooxidative degradation

S/191/63/000/003/005/022
B101/B186

gaseous oxidation products proved chromatographically in (I). At 130° and $p_{O_2} = 200$ mm Hg, O_2 was noticeably adsorbed by I and II, the stability of I being larger than that of II. III was oxidized more easily than I and II. The effect of the following stabilizers was tested; 0.2% KI; 0.2% copper naphthenate; 0.1% KI + 0.1% copper naphthenate; 0.5% diphenyl amine; N-iso-propyl-N'-phenyl-p-phenylene diamine; N,N'-di-sec-octyl-p-phenylene diamine; N,N'-di-sec-nonyl-p-phenylene diamine; N,N'-di- β -naphthyl-p-phenylene diamine; phenyl- β -naphthyl amine (Neozone D); N-phenyl-n'-cyclohexyl-p-phenylene diamine; α - and β -naphthol; 2,6-di-tert-butyl-4-methyl phenol (ionol); 2,2-methylene-bis-(4-methyl-6-tert-butyl)-phenol (2246) n-propyl gallate; phenol styrene condensation product; mercaptobenzimidazole; tri-nonyl triphenylene phosphite; and polyphosphites as well as the photo-stabilizers 2-hydroxy-4-methoxy-benzophenone and 2,2'-hydroxy-5'-methyl-phenyl benzo triazole. Results: Aromatic amines were more effective than phenols and naphthols. N,N'-di- β -naphthyl-p-phenylene diamine was most active for I and II; Neozone D, however, for II. The mixture containing 0.1% KI and 0.1% copper naphthenate had a strong protective effect in I and II. There are 9 figures.

Card 2/2

L 10624-63

ЭФФ(с)/СРМ/ЭМР(с)/ЕАТ(с) (Р/М/С/С(с))-2-АФТТ/АСД/ССД--Р-4/
Рс-4, Рс-4 Р-4--РМ/МАТ/ВВ

ACCESSION NR: AP3000688

S/0190/63/005/005/0649/0654

AUTHOR: Kovarskaya, B. M.; Akutin, M. S.; Sidnev, A. I.; Yazvikova, M. P.;
Neyman, M. B.

TITLE: Investigation of the thermooxidative decomposition of a polycarbonate

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 5, 1963, 649-654

TOPIC TAGS: Diflon, polycarbonate, thermooxidative degradation, thermooxidative decomposition

ABSTRACT: The thermooxidative degradation of the Soviet polycarbonate "Diflon" (mol. wt., 18,000) has been studied. Thermooxidation was carried out at 240 to 300C and 92 to approximately 700 mm Hg of oxygen with equipment described previously by the authors (M. B. Neyman, B. M. Kovarskaya, M. P. Yazvikova, A. I. Sidnev, M. S. Akutin, Vysokomolek. soyed., 3, 602, 1961). It was found that the initial rate of change of pressure in the system, i.e., the oxidation rate (W_0) is directly proportional to the oxygen pressure and increases with temperature according to the law $W_0 = a \exp(-E/RT)$, where $E = 36,500$ kcal/mol. The weight

Card 1/1

L 10624-63

ACCESSION NR: AP3000688

loss of Diflon at 300C and constant initial oxygen pressure increases linearly with time after a certain initial period; the higher the initial pressure, the greater the loss. Analysis of the degradation products revealed CO_2 , CO, H_2 (traces), H_2O , CH_2O , and bis(hydroxyphenyl)propane; hydroperoxides were not detected. It was concluded that the degradation is an autoaccelerating chain reaction with degenerate branchings which are evidently due to hydroperoxide decomposition. The reaction is speeded up by the presence of impurities introduced in the starting materials. Special preliminary purification of Diflon by multiple reprecipitation improved oxidation stability by about 50%. An oxidation mechanism is suggested which shows that oxidation not only gives rise to gaseous products but also alters the structure of the polymer chains in which aldehyde and hydroxy groups accumulate. This is confirmed by the fact that the thermal stability (in the absence of oxygen) of oxidized Diflon is far lower than that of the initial Diflon, owing probably to the decomposition of the aldehyde groups and to additional oxygen-containing groups which facilitate ester bond cleavage. Orig. art. has: 10 formulas and 8 figures.

Scientific Research Institute of Plastics

Card 2/12

ACCESSION NR: AP4018159

S/0191/64/000/003/0014/0017

AUTHORS: Levantovskaya, I.I.; Kovarskaya, B.M.; Neyman, M.B.;
Rozantsev, E.G.; Yazvikova, M.P.

TITLE: Inhibiting the thermal oxidative destruction of polyamides
with aromatic amines and radical type stabilizers

SOURCE: Plasticheskiye massy*, no.3, 1964, 14-17

TOPIC TAGS: polyamide, thermal oxidation, oxidation inhibition,
antioxidant, phenyl beta naphthylamine, piperidine nitric oxide,
piperidone nitric oxide, radical type stabilizer, induction period

ABSTRACT: The inhibition of thermal oxidation of polyamides with
phenyl-beta-naphthylamine and with the free radical type stabilizers
2,2,6,6-tetramethylpiperidone nitric oxide and 2,2,6,6-tetramethyl-4-
ethyl-4-hydroxypiperidine nitric oxide was investigated. The radical
stabilizers display marked inhibition of thermal oxidation. Less
than half of the original amount of aromatic amine is spent during
the induction period in inhibiting polyamide thermal oxidation; inhi-

Card 1/2

ACCESSION NR: AP4018159

bition of oxidation at the end of the induction period apparently depends on the remaining unspent antioxidant. Unlike the aromatic amines, the free radical inhibitors retard the oxidation of polyamides until they are completely consumed. At the end of the induction period the rate of oxidation with these radical inhibitors approaches the rate of oxidation of the uninhibited polymer. Orig. art. has: 8 figures and 2 formulas.

ASSOCIATION: None

SUBMITTED: OO

DATE ACQ: 27Mar64

ENCL: OO

SUB CODE: CH

NR REF SOV: 008

OTHER: 000

Card 2/2

L 13818-66 EWT(m)/EWP(1) WW/RM
ACC NR: AP6002481 (A)

SOURCE CODE: UR/0191/66/000/001/0042/0044

AUTHORS: Neyman, M. B.; Kovarskaya, B. M.; Levantovskaya, I. I.; Yazvikova, M. P.

ORG: none

TITLE: Thermo-oxidative degradation of polytetrahydrofurane ^{744,3}

SOURCE: Plasticheskiye massy, no. 1, 1966, 42-44

TOPIC TAGS: polymer, oxidative degradation, oxidation, oxidation kinetics

ABSTRACT: To extend the work on the properties of polytetrahydrofurane, published by A. B. Blyumenfel'd, M. B. Neyman, and B. M. Kovarskaya, (DAN SSSR, 154, 631, 1964), the thermo-oxidative degradation of polytetrahydrofurane was studied in the temperature interval of 90—120C. The experimental technique is that described by V. B. Miller, M. B. Neyman, and Yu. A. Shlyapnikov (Vysokomolek. soyed., 1, 1703, 1959). The kinetics of oxygen absorption, the thermal dependence of the induction period, the autocatalytic factor, the time for the maximum accumulation of hydroperoxides, and the dependence of the induction period on the concentration of a number of antioxidants at 120C and 200 mm ϕ_2 pressure were determined. The experimental results are presented graphically (see Fig. 1). It was found that the autocatalytic factor Φ and the induction period τ are given by

Card 1/2

UDC: 547.722.3:54=126.01:536.495:543.872

L 13818-66

ACC NR: AP6002481

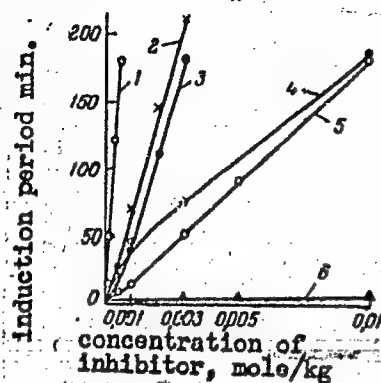


Fig. 1. Dependence of the induction period on the concentration of antioxidant. 1 - N-phenyl-N'-cyclohexyl-n-phenylene-diamine; 2 - 2,2-methylene-bis-(4-methyl-6-tert-butyl)-phenol (stabilizer 2246); 3 - pyrocatechine; 4 - 2,6-di-tert-butyl-4-methylphenol (ionol); 5 - ionolpyrocatechine-phosphite; 6 - triionolphenyl phosphite (polygard). T = 200C, $P_0 = 200$ mm.

$$\varphi = ae^{-\frac{\gamma_1}{T}}$$

$$\tau = be^{-\frac{\gamma_2}{T}}$$

where γ_1 and γ_2 are equal to 6000 and 7000 respectively, and a and b are constant. Orig. art. has: 5 graphs and 8 equations.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 004

OC

Card 2/2

YAZVIN, A.I.

Increasing the percentage of high-grade alumina recovery.
Ogneupery 18 no.2:65-68 F '53. (MIRA 11:10)

1.Glavogneuper.
(Alumina) (Clay)

YAZVIN, A.I.

Order of amortization of stripping operation costs. Ogneupory 21
no.7:313-317 '56. (MLRA 10:1)
(Refractory materials) (Strip mining--Accounting)

BINDEMAN, Nikolay Nikolayevich. Prinimali uchastiye: YAZVIN, L.S.;
BABUSHKIN, V.D.; SEMENOVA, S.M., nauchnyy red.; KOLOSHINA,
T.V., red. izd-va; SEMAKOVA, T.M., tekhn. red.

[Evaluation of underground water resources for their use] Otsen-
ka eksploatatsionnykh zasposov podzemnykh vod; metodicheskoe ru-
kovodstvo. Moskva, Gosgeoltekhizdat, 1963. 202 p.

(Water, Underground)

(MIRA 16:7)

FROLOV, N.M.; AVER'YEV, V.V.; DUKHIN, I.Ye.; LYUBIMOVA, Ye.A.; Prinimali
uchastiye: GOL'DBERG, V.M.; MAVRITSKIY, B.F.; SEDOV, N.V.;
YAZVIN, L.S.; KUTASOV, I.M.; STARIKOVA, G.N.; KORTSENSHTEYN, V.N.,
red.

[Methodological instructions for studying thermal waters in
boreholes.] Metodicheskie ukazaniia po izucheniiu termal'nykh
vod v skvashinakh. Moskva, Nedra, 1964. 139 p. (Moskow. Vse-
soiuznyi nauchno-issledovatel'skii institut gidrogeologii i
inzhenernoi geologii. Trudy, no.17). (MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii
i inzhenernoy geologii, Moskva (for Frolov, Gol'dberg, Mavritskiy,
Sedov, Yazvin). 2. Institut vulkanologii Sibirskogo otdeleniya
AN SSSR (for Aver'yev). 3. Institut merzlotovedeniya AN SSSR
(for Dukhin). 4. Institut fiziki Zemli AN SSSR (for Lyubimova,
Kutasov, Starikova).

1
MCHEVER, P.M.; YAGTON, L.L.

Nonsteady pressure-pressureless movement of underground waters
to water bodies. Truly lab. inst. geol. Vodego no. 5:
124-137 '63 (MIRA 17:8)

PROLOV, N.M.; YAZVIN, L.S.

Problems of prospecting for thermal waters. Sov. geol. 8 no.5:90-100
My '65. (MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii i
inzhenernoy geologii.

YAZVIN, M.A.

Some organizational problems in the therapeutic and prophylactic work of the district physician. Sbor. trud. Kursk. gos. med. inst. no.13:71-75 '58. (MIRA 14:3)

1. Iz kliniki propedevtiki vnutrennikh bolezney (zav. - prof. M.A. Cherkasskiy) Kurskogo gosudarstvennogo meditsinskogo instituta (HOSPITALS--STAFF)

YAZVIN, V. P.

В. В. Фурман,
С. Н. Кротов
Устройство автоматизированной системы

9 июня
(с 18 до 22 часов)

В. А. Савин,
С. Г. Корсунский
Автоматизированная система

В. С. Матвеев
О автоматизации процесса обработки радио-
технических данных при стереофотосъемке в
автоматизированной системе

А. М. Комаров
Стереоскопическая обработка данных

10 июня
(с 10 до 16 часов)

В. А. Марков,
Н. А. Мамон
Контроль и управление траекторией в системе
автоматизированной обработки

А. С. Голубев
Методы обработки автоматизированной системы
в системе автоматизированной обработки

В. М. Яков
Информационная система управления
МПС для автоматизированной системы

В. А. Марков
Новый прибор для автоматизированной системы
управления движением в автоматизированной системе

10 июня
(с 18 до 22 часов)

В. А. Марков
Задача автоматизации системы на автоматизированной
системе

Н. М. Павлов
Анализ автоматизированной системы, автоматизации при
автоматизации на автоматизированной системе и других
автоматизированных системах

11 июня
(с 10 до 16 часов)

ОБЩЕГОДОВОЕ СОВЕЩАНИЕ НА МОСКОВСКОМ

В. А. Марков *Stasovskaya P. M.*
Новая система автоматизированной системы
управления движением в автоматизированной
системе, системы на автоматизированной

report submitted for the General Meeting of the Scientific Technological Society of
Radio Engineering and Electrical Communications in A. S. Popov (VSEI), Moscow,
8-12 June, 1959

CA-YAZVITSKIY, M. N.		PROCESSING AND PROGRESS-11 INDEX	
<p>Content of inorganic phosphorus pentoxide in the leaves as an index of a sufficient supply of phosphorus and other elements. M. N. Yazvitskiy (Moscow Expt. Sta. for Fruit Growing). <i>Compt. rend. acad. sci. U.R.S.S.</i> 40, 431-8 (1945).—The amt. of leaf inorg. P_2O_5 (I) present at a given moment depends on the rate of intake of P, the rate of synthesis of org. P compds., and on the supply of other elements necessary for the synthesis. By the change in the amt. of I after the introduction of other elements it may be judged whether the latter were limiting or not. To check this hypothesis there must be shown (1) a correlation between available P in the soil and I in the leaves and (2) whether I becomes less after deficient elements are introduced. In leaves of currant I increased in proportion to the amt. of P applied to the soil and was greater when the fertilizer was placed in holes 20 cm. deep than when spread on the surface. When N was deficient, I decreased with increasing application of N. The fall occurred in the spring if complete fertilizer was applied but if P and K were added in the spring and N delayed till summer, the fall in I did not occur till summer. The addn. of K to K-deficient soils had the same effect on I as did N when N was limiting. Several-days immersion in dil. $NaNO_3$ of severed leaves grown under N deficiency caused a lower I than in those immersed in water. Conversely the immersion of leaves grown under high-N nutrition had more I after immersion in nitrate than in water. Identical results were obtained by pulverizing the plants with nutrient soils. I. T. Sullivan</p>			
<p>ASM-5LA METALLURGICAL LITERATURE CLASSIFICATION</p>			
<p>STONY ROMANOV</p>			

YAZVITSKIY, M. N. -- Cand. Agricult. Sci.

Dissertation: "Basic Problems of Fertilizing Strawberries." All-Union
Sci Res Inst of Fertilizers, Agricultural Engineering and Soil Science
imeni K. K. Gedyets, 25 Nov 47.

SO: Vechernyaya Moskva, Nov, 1947 (Project #17836)

YAZVITSKIY, M, N.

25762 YAZVITSKIY, M. N. Mestnoye okul'Turivaniye podzolistoy pochvypod
plodovyye rasteniya Sad i ogorod, 1948, No. 7. s. 10-16

SO: Letopis' Zhurnal Statey, No. 30, Moscow, 1948.

YAZVITSKIY, M. [N]

Udobrenie sada (Fertilizing the garden). Moskva, "Mosk. Rabochii", 1953. 112 p.

SO: Monthly List of Russian Accessions, Vol. 7, No. 6, Sep. 1954

YAZVITSKIY, M. N.

Fertilizing orchards. Moskva. Moskovskii rabochii, 1954. 111p.

YAZVITSKIY, Mikhail Nikolayevich; KOBRIN, B., redaktor; YAKOVLEVA, Ye.,
tekhnicheskiiy redaktor

[Fertilizing orchards] Udobrenie sada. Izd. 2-oe, dop. [Moskva]
Moskovskii rabochii, 1956. 190 p. (MLRA 10:3)
(Fertilizers and manures) (Fruit culture)

711<112014, 1114
KAMSHILOV, N.A.; ANTONOV, M.V.; BAKHAREV, A.N.; BLINOV, L.F.; BORISOGLEBSKIY,
A.D.; GAR, K.A.; GARINA, K.P.; GORSHIN, P.P.; GUTYEV, G.T.;
DELITSINA, A.V.; DUBROVA, P.F.; YEVTUSHENKO, A.F.; YEGOROV, V.I.;
YEREMENKO, L.L.; YEFINOV, V.A.; ZHILITSKIY, Ya.Z.; ZHUCHKOV, N.G.,
prof.; ZAYETS, V.K.; ISKOL'DSKAYA, R.B.; KOLESHNIKOV, V.A., prof.;
KOLESHNIKOV, Ye.V.; KOSTINA, K.F.; KRUGLOVA, V.A.; LEONT'YEVA, M.N.;
LESYUK, Ye.A.; MUKHIN, Ye.N.; NAZARYAN, Ye.A.; NEGRUL', A.M., prof.;
ODITSOV, V.A.; OSTAPENKO, V.I.; PETRUSEVICH, P.S.; PROSTOSERDOV,
N.N., prof.; RUKAVISHNIKOV, B.I.; RYABOV, I.N.; SABUROV, N.V.;
SABUROVA, T.N.; SAVZDARG, V.E.; SEMIN, V.S.; SIMONOVA, M.N.;
SMOLYANINOVA, N.K.; SOBOLEVA, V.P.; TARASENKO, M.T.; FETISOV, G.G.;
CHIZHOV, S.T.; CHUGUNIN, Ya.V., prof.; YAZVITSKIY, M.N.;
ROSSOSHCHANSKAYA, V.A., red.; BALLOD, A.I., tekhn.red.

[Fruitgrower's dictionary and handbook] Slovar'-spravochnik
sadovoda. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1957. 639 p.

(MIRA 11:1)

(Fruit culture--Dictionaries)

VOZNYAKOVSKAYA, Yu. M.; YAZVITSKIY, M.H.

Effect of various fertilizers on apple yields and biological processes in the rhizosphere of apple trees. Agrobiologiya no. 3:95-98 My-Je '58. (MIRA 11:7)

1. Moskovskoye otdelniye instituta sel'skokhozyaystvennoy mikrobiologii i Moskovskaya plodovo-yagodnaya opytnaya stantsiya.
(Apple)

(Fertilizers and manure)
(Rhizosphere microbiology)

IVANOV, P.P., kand.sel'skokhoz.nauk; YENIKHEYEV, Kh.K., doktor biolog.nauk;
YAZVITSKIY, M.N., kand.sel'skokhoz.nauk, zasluzhennyy deyatel'
nauki RSFSR.

Lack of understanding in approaching problems of scientific work;
letter to the editor. Agrobiologiya no.2:316-317 Mr-Apr '59.
(MIRA 12:6)

1. Direktor Moskovskoy plodovo-yagodnoy opytной stantsii (for
Ivanov). 2. Zamestitel' direktora po nauchnoy chasti Moskovskoy
plodovo-yagodnoy opytной stantsii (for Yenikheyev). 3. Zaveduyu-
shchiy agrokhimicheskoy laboratoriyey Moskovskoy plodovo-yagodnoy
opytной stantsii (for Yazvitskiy).
(Strawberries--Fertilizers and manures)

YAZVITSKIY, Mikhail Nikolayevich, kand.sel'skokhoz.nauk, zasluzhennyy
deyatel' nauki RSFSR; KOBRIH, B.; YAKOVLEVA, Ye., tekhn.red.

[Fertilizer application to orchards] Udobrenie sada. Izd.3.,
dop. Moskva, Mosk.rabochii, 1960. 214 p.

(MIRA 14:1)

(Fruit--Fertilizers and manures)

NEFEDOV, V.B.; POPOV, V.P.; YAZVITSKIY, Yu.S.

[Gamma radiation in inelastic interaction of fast
neutrons with atomic nuclei] Gamma-izluchenie pri
neuprugom vzaimodeistvii bystrykh neitronov s atom-
nymi iadrami. Moskva, Glav. upr. po ispol'zovaniyu
atomnoi energii, 1960. 21 p. (MIRA 17:2)

YAZVITSKIY, Y. S., BLOKHINSTEY, D. T., BLOKHIN, G. B., BLYUKINA, Y. A.,

BONDARENKO, I. I., BEVYAGIN, B. M., ZAINOVSKIY, A. S., ZIMOV'YEV, V. P.,
KAZACHOVSKIY, G. D., KRAZNOYAPOV, N. V., LEYFONSKIYA, A. I., MALIN, V. A.,
NAZAROV, P. M., NIKOLAYEV, S. K., STAVISSKIY, Y. Y., UKRAINSTEY, F. I.,
FRANK, I. M., SHAPIRO, F. L.

"A Pulse fast reactor."

report submitted for the IAEA seminar on the Physics of Fast and
Intermediate Reactors, Vienna, 3-11 Aug 1961.

Acad Sci. USSR. Moscow

33003

S/641/61/000/000/030/033

B102/B138

26.2246

AUTHORS: Nefedov, V.V., Popov, V. I., Yazvitskiy, Yu. S.

TITLE: Gamma radiation in inelastic interaction of neutrons with nuclei

SOURCE: Krupchitskiy, P. A., ed. Neytronnaya fizika; sbornik statey. Moscow, 1961, 324-334

TEXT: Radiative transitions with energies above 3 Mev were studied in nuclei excited with 14-Mev neutrons. An arrangement consisting of a scintillation spectrometer, 14-Mev neutron source and the specimens was used for the γ -spectra measurements. The spectrometer was used to find the gamma energy from the energy of the electron-positron. It consisted of three ФЭУ-С (FEU-S) photomultipliers with CsI(Tl) crystals and an electronic recording circuit. A tritium-zirconium target bombarded by 300-kev deuterons supplied the neutrons. The following elements were investigated: C^{12} (graphite), O^{16} (water) and Be^9 , Mg^{24} , Al, Fe and Cu (all as metals). The gamma spectrometer was calibrated with 2.67-Mev RaTh radiation and 4.43-Mev Po-Be radiation. The resolution was between 7 and 14 %, depending on the duration of the measurements, the efficiency was

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S/641/61/000/000/030/033
B102/B138

Gamma radiation in inelastic...

$\sim 10^{-4}$ per quantum at 4.43 Mev. The spectrometer crystals were shielded against background radiation with a lead cone, the external background was eliminated by subtracting the spectrum without, from that with, the specimen. The cross section calculations were made with an accuracy of 20-30 %. The following results were obtained: Li. No gamma radiation with energy higher than 2 Mev was recorded. Be. Its spectrum was studied up to ~ 4 Mev. It has two flat peaks at 2.5 and 3.6 Mev. C^{12} . The spectrum has a high peak at 4.4 Mev which is due to a transition from the first excited state to the ground state. A line at about 3.2 Mev was also found with $\sigma < 0.07$ b (transition from the 7.6-Mev level to the 4.45-Mev level). At higher energies peaks were detected at 6 and 7 Mev (0.023 and 0.013 b), which both occur in $C^{12}(n,n')C^{12*}$ reactions. They are due to transitions from the 10.8- and 11.7-Mev levels to the 4.45-Mev level. O^{16} . The spectrum is a descending curve with peaks at 3.8, 5.0, 6.1 and 7.1 Mev. The corresponding cross sections were 0.06, 0.25, 0.10, 0.07 and 0.45 b. This is probably the first time the 4.6-Mev line has been observed. Mg^{24} . The spectrum has its sharpest peak at 4.1 Mev (0.28 b), minor peaks at 6.1 and 6.9 Mev caused by $Na^{24}(n,p)Mg^{24}$ reactions and indistinct peaks at 4.8 and 5.3 Mev. Al, Fe, Cu. The Al spectrum has peaks at 3.8, 4.9, 5.6, 6.3 and 6.9 Mev

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S/641/61/000/000/030/033

B102/B138

Gamma radiation in inelastic...

(0.29, 0.16, 0.09, 0.04 and 0.03 b), the Fe spectrum has indistinct peaks at 7.5, 6.1 and 5.0 Mev (0.29, 0.34 and 0.55 b) and Cu has peaks at 6.1, 5.0 and 4.0 Mev (0.14, 0.25 and 0.47 b). The mean energies carried off by γ -quanta when the excitation energies exceed 4 Mev are 7, 2.3, 3.3, 4.5 and 5.2 Mev for O^{16} , Mg^{24} , Al^{27} , Fe and Cu. I. M. Frank is thanked for interest, I. V. Shtranikh, A. Ye. Voronkov and V. N. Bochkarev for assistance. There are 9 figures, 3 tables, and 10 non-Soviet references. The four most recent references to English-language publications read as follows: Ajzenberg F., Lauritsen T. Rev. Mod. Phys., 27, no. 1, 77 (1955); Battat M. E., Graves E. R. Phys. Rev., 97, 1266 (1955); Rasmussen W. K., Miller D. W., Sampson M. B. Phys. Rev., 100, 181 (1955); Wakatsuki T., Hirao Y., Okada E., Miura J. J. Phys. Soc. Japan, 12, 1778 (1957). ✓

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26.2200

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S/089/61/010/005/001/015
B102/B214

AUTHORS: Blokhin, G. Ye., Blokhintsev, D. I., Blyumkina, Yu. A.,
Bondarenko, I. I., Deryagin, B. N., Zaymovskiy, A. S.,
Zinov'iyev, V. P., Kazachkovskiy, O. D., Kim Khen Bon,
Krasnoyarov, M. V., Leypunskiy, A. I., Malykh, V. A.,
Nazarov, P. M., Nikolayev, S. K., Stavitskiy, V. Ya.,
Ukrainsev, F. I., Frank, I. M., Shapiro, F. L.,
Yazvitskiy, Yu. S.

TITLE: A pulsed fast reactor

PERIODICAL: Atomnaya energiya, v. 10, no. 5, 1961, 437-446

TEXT: The present paper gives a description of the pulsed fast reactor of the Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research) which became critical in June, 1960. This reactor, called M6P (TBR) reactor, serves as pulsed fast neutron source (mean power ≈ 1 kw) for physical investigations, particularly for time-of-flight experiments. Its most distinguishing feature is the very small contribution ($\sim 10^{-4}$) of the delayed neutrons in its normal operation; it is about

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A pulsed fast reactor

one hundredth of that of the usual steady uranium reactor. The pulses appear because whenever the reactor becomes overcritical a burst of prompt neutrons results. The half width of these pulses is 36 μ sec. The frequency with which the pulses are repeated can be varied between 8 and 80 pulses/sec. Fig. 2 shows the construction of this reactor. The periodic change in the reactivity is brought about by the displacement of the two U^{235} blocks placed in two disks that can be rotated. The main block is pressed in the form of a disk, 1100 mm in diameter, and can be rotated with a peripheral velocity of 276 m/sec (at 6000 rpm) during which it passes through the core center. The reactivity change obtainable from the motion of the main block is 7.4 %, that obtainable from the motion of the auxiliary block is 0.4 %. The stationary part of the core consists of plutonium lumps in steel jackets. The reactor is started by a rough regulator, in this case a movable part of the reflector. It gives a reactivity change at the rate of $13 \cdot 10^{-5} - 1.3 \cdot 10^{-5} \text{ sec}^{-1}$. The manually operated rod is also a part of the reflector. Two plutonium rods in electromagnetic suspension serve as scram. They can be separated from the core with an acceleration of 20 g. Their separation causes a reactivity

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decrease of 2-1.1 %; the rough regulator allows a reactivity change of 2.4 %, the manual regulator 0.1 %, and the automatic regulator 0.036 %. The reactor possesses also a reactivity booster for the production of one intensive pulse. The control and shield system is an automatically functioning electronic arrangement with BF_3 counters and ionization

chambers. The whole reactor is placed in a room of size 10·10·7 m whose concrete walls allow complete protection from radiation. The most important experimental arrangement consists of a 1000 m long neutron conductor, a metal tube, 400 mm in diameter in the first part and 800 mm in the second part in which a pressure of 0.1 mm Hg is maintained. This conductor connects a chain of so-called "intermediate pavilions" (at distances of 70, 250, 500, 750, and 1000 m from the reactor) in which experiments can be carried out. There is also an additional neutron conductor of 100 m length. The reactor chamber is joined to an experimental chamber in which four neutron beams of up to 800 mm diameter are available. There is such an experimental chamber also above the reactor chamber. Various experiments were carried out with the reactor and they are described in the present paper. These are experiments with stand

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assemblies and slowly moving main block for the determination of the most important parameters of the reactor; experiments with a core assembly (unmoved), experiments with rotating (5000 rpm) main block and a Ra- α -Be source in the core for the investigation of the effect of the multiplication factor, etc. The most important results are represented graphically. For example, Fig. 8 shows the dependence of the half width θ of a pulse on the reactivity; the dashed line holds for the quasistationary case, the dot-dash line for the case of $\theta = K(\tau/\alpha)^{1/3}v^{-2/3}$, where v is the velocity of motion of the (rotating) main block; in the quasistationary case $\theta = 2\sqrt{\epsilon_m/\alpha v^2}$, where ϵ_m is the reactivity at the maximal multiplication factor; $\epsilon = \epsilon_m - \alpha x^2$, where x is the displacement of the main block. The reactor has been actually used for the measurement of the total, scattering, capture, and fission cross sections by the time-of-flight method. Further experiments will be carried out with a view to obtaining increase of power and decrease of the pulse duration. There are 15 figures and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: J. Orndorf, Nucl. Sci. and Engng, 2, No. 4, 450 (1957).

Card 4/74

VIZI, I.; GROMOV, K.; DZHELEPOV, B.; YAZVITSKIY, Yu.

Decay mode of Eu^{147} . Izv. AN SSSR. Ser. fiz. 25 no.9:1101-1104 '61. (MIRA 14:8)

1. Ob'yedinennyy institut yadernykh issledovaniy i Radiyevyy institut im. V.G. Khlopina AN SSSR.
(Europium—Decay)

YAZVITSKIY, Yu.

S/048/62/026/001/011/018
B125/B102

AUTHORS: Wang Fu-chun, Vizi I., Gromov, K., Dzhelepov, B., Zhelev, Zh., Kudryavtseva, A., and Yazvitakiy, Yu.

TITLE: Eu¹⁴⁹ decay scheme

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 1, 1962, 114 - 119

TEXT: The authors continued to study the spectrum of Eu¹⁴⁹ conversion electrons ($T_{1/2} = 90$ days) by means of a β -spectrometer with triple focusing of the beam (B. S. Dzhelepov et al., Preprint OIYaI, P-587. Dubna, 1960). The europium preparation was separated from a target irradiated by 660-Mev protons on the synchroyclotron of the OIYaI. Three months after the irradiation the lines Eu¹⁴⁷ ($T_{1/2} = 25$ days), Eu¹⁴⁸ (58 days), Eu¹⁴⁹ (~90 days), Gd¹⁴⁶ (45 days), Gd¹⁵¹ (120 days), and Gd¹⁵³ (240 days) were observed. The specimens contained a small amount of gadolinium impurities. Besides an intense X-ray line the Eu¹⁴⁹ spectrum Card 1/13

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Eu¹⁴⁹ decay scheme

shows the groups with 256 - 279, 330 - 352, and 508 - 530 kev with a half life of (90 ± 20) days. The strong conversion line with ~20 kev has a half life of ~100 days. It is mainly due to Eu¹⁴⁹ and to a lesser degree to gadolinium impurities. A measurement made with a single counter after purifying the europium preparation from gadolinium showed that the relative intensity of the above lines with 20.2 kev, and the relative intensities of the additional 14.3-kev and K279 lines of Eu¹⁴⁹ were the same as before the purification. This proves that the 14.3- and 20.2-kev lines (L- and M-lines of the 22-kev transition) belong to Eu¹⁴⁹. The parameters of the Eu¹⁴⁹ conversion electrons are given in the Table. Fig. 2 shows the Eu¹⁴⁹ decay scheme suggested by the presence of three 22-kev transitions and that of a γ -transition with 22 kev. It was verified by studying the γ -spectrum and some spectra of the γ -coincidences on Eu¹⁴⁹ decay by means of a scintillation γ -spectrometer. This instrument is based on the fast-slow recording of the coincidences with summation. The coincidence circuit EDC-1 (BDS-1) operates at close

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Eu¹⁴⁹ decay scheme

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quantum energies in the cascade to be studied when the time resolution is $2 \cdot 10^{-7}$ sec and with a considerable difference of the quantum energies when the time resolution is $6 \cdot 10^{-7}$ sec. The 180- and 350-keV γ -rays observed with a time resolution of $2 \cdot 10^{-7}$ sec in the $\gamma\gamma$ -coincidences spectrum and the lacking of coincidences of 256- and 279-keV γ -rays confirm the decay scheme shown in Fig. 2. No cascade was found to start from 352 keV. In some experiments with reduced time resolution of $6 \cdot 10^{-7}$ sec the 509 - 530, 330 - 352, 250 - 279 and 178-keV γ -rays coincide with X-rays. Besides, a coincidence of 22-keV γ -rays with X-rays was observed. Owing to the observed coincidences with the X-rays the lifetime of the excited Sm¹⁴⁹ levels shown in Fig. 2 is less than 10^{-6} sec. There are 8 figures, 1 table, and 3 Soviet references. ✓

Fig. 2. Eu¹⁴⁹ decay scheme.

Table. Data on Eu¹⁴⁹ conversion lines.

Legend: (1) Conversion line observed; (2) relative intensity of conversion line; (3) results obtained by the authors.

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ACCESSION NR: AP4012259

S/0089/84/016/001/0012/0016

AUTHOR: Lu, Min; Shabalin, Ye. P.; Yazvitskiy, Yu. S.

TITLE: Experimental investigation of fluctuations in the pulse reactor

SOURCE: Atomnaya energiya, v. 16, no. 1, 1964, 12-16

TOPIC TAGS: pulse reactor, pulse fluctuation, nuclear fission, reactor power, reactor intensity dispersion, prompt neutron, delayed neutron

ABSTRACT: Measurements of intensity fluctuations in flashes of the IBR pulse reactor of the Laboratoriya neytronnoy fiziki Ob'yedinennogo instituta yaderny*kh issledovaniy (Laboratory for Neutron Physics of the Joint Institute for Nuclear Research) are described. The purpose of the measurements was to obtain data on the average reactor power by means of the relationship $\sigma^2 = \frac{\Delta^2}{2W_1\beta\tau}$, where σ^2 is the relative dispersion of the pulse intensity,

Δ^2 is the dispersion of the multiplication coefficient for a single fission event, W_1 - average power (number of fission events per sec), β - the effective fraction

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ACCESSION NR: AP4012259

of delayed neutrons, and t -average life of the prompt neutrons in the reactor Δ^2 , (which for uranium and plutonium is estimated to be 0.8), β , and t have been previously determined by other authors. The above relationship reduced to $\sigma^2 = 0.30$ (W - average power in watts). The fluctuations were measured with a scintillation counter and an FEU-12a photomultiplier. The measurements were conducted at six power levels between 30 and 1200 w. The results agree, within experimental errors, with data obtained from heat evolution in the active zone. "The authors appreciate the useful discussions with F. L. Shapiro and the help with measurements by V. D. Anan'yev, V. D. Denisov, B. N. Deryagin, S. A. Kvasnikov, V. T. Rudenko, and L. Ye. Rudenko." Orig. art. has: 4 figures

ASSOCIATION: Laboratorii neytronnoy fiziki Ob'yedinennogo instituta yaderny*kh issledovaniy (Laboratory for Neutron Physics of the Consolidated Institute for Nuclear Research)

SUBMITTED: 21Mar63

SUB CODE: NS

DATE ACQ: 14Feb64

NO REF SOV: 004

ENCL: 00

OTHER: 003

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L 2771-66 EWP(e)/EPA(s)-2/EWT(m)/EWP(1)/EPF(n)-2/I/EWP(t)/EWP(b) IJP(c)
ACCESSION NR: AP5021333 JD/WH/JG/RM UR/0120/65/000/004/0070/0072
539.1.074.8

AUTHOR: Popov, A. B.; Yazvitskiy, Yu. S.

TITLE: Liquid scintillator neutron detector with cooled photomultipliers

SOURCE: Priory i tekhnika eksperimenta, no. 4, 1965, 70-72

TOPIC TAGS: scintillator, scintillation detector, scintillation counter, neutron detector, photomultiplier

ABSTRACT: One of the basic difficulties encountered during the development of liquid boron-containing scintillation neutron detectors is due to the fact that the photomultiplier pulses corresponding to neutron registration are within the range of the photomultiplier noise. On the other hand, the smallness of the neutron momentum excludes the use of multichannel coincidence circuits. The present authors designed a highly efficient liquid boron-containing neutron scintillation detector with a 500 cm² area containing eight FEU-13 photomultipliers operating at -15 to -20°C. The liquid scintillator (50% toluol/ 50% methyl borate, 4 g/liter PPO, 0.5 g/liter POPOP) is enclosed within a metallic disc 25 cm in diameter and 3 cm high. The block diagram of the detector is given and its

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ACCESSION NR: AP5021333

operation described. The neutron lifetime within the detector is about 2 μ sec.
"The authors thank I. M. Stoletova, K. G. Rodionov, and A. A. Omel'yanenko for
their help during the work." Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy, Dubna (Joint
Institute of Nuclear Research)

SUBMITTED: 27Jun64

ENCL: 00

SUB CODE: NP, OP

NO REF SOV: 002

OTHER: 001

PC

Card

2/2

VAN NAY-YAN' [Wang Nai-yen]; VIZI, I.; YEFIMOV, V.N.; KARZHAVINA, E.N.;
KIM KHI SAN; POPOV, A.B.; PIKEL'NER, L.B.; PSHTULA, M.I.;
STADNIKOV, T.; CHEN LIN-YAN'; CHARAPOV, E.I.; SHELONTSEV, I.I.;
SHIRIKOVA, N.Yu.; YAZVITSKIY, Yu.S.

Neutron resonances in Rh^{103} . Zhur. eksp. i teor. fiz. 45
no.6:1743-1753 D '63. (MIRA 17:2)

1. Ob'yedinenny institut yadernykh issledovaniy.

VAN NAY-YAN' [Wang Nai-yen]; ILIYESKU, N.; KARZHAVINA, E.N.; KIM KHI SAN;
POPOV, A.B.; PIKEL'NER, L.B.; STADNIKOV, T.; SHARAPOV, E.I.;
YAZVITSKIY, Yu.S.

Neutron resonances in praseodymium and terbium. Zhur. eksp.
i teor. fiz. 47 no.1:43-51 J1 '64. (MIRA 17:9)

1. Ob'yedinennyi institut yadernykh issledovaniy.

YAZOVSKIKH, I.M., inzh.; BOYCHENKO, A.S., inzh.; LESH, V.A., inzh.

Effect of carbon and poring temperature on the formation of
hot cracks in the casts made from an X28 melt. Khim. mashinostr.
no. 6:29-30 N-D '62. (MIRA 17:9)

TISHCHENKO, I.G. [Tishchenka, I.R.]; IAZYCHENKO, V.M. [Iazychenka, V.M.]

Interaction of 3-methyl-3,4-epoxy-2-butanone and
3-methyl-3,4-epoxy-2-pentanone with amines. Vestsi
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YAZYCHKOV, M. F.

YAZYCHKOV, M. F. ---"Developing a Rational Machine for Drying Cotton Yarn on Bobbins." Min Higher Education USSR. Moscow, 1956. (Dissertation for the Degree of Candidate in Technical Sciences).

So.: Knizhnaya Litopis', No. 7, 1956.

YAZYCHKOV, M.F., kand. tekhn. nauk, starshiy nauchnyy

Principles of designing SKB-6 dryers, Tekst. prom. 19 no.11:52-55
N '59. (MIRA 13:2)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut tekstil'nogo i
legkogo mashinostroyeniya.
(Drying apparatus)

YAZYCHKOV, M.F.; DOLGOV, V.V.

Review of N.G.Morozov's article "Ways for the intensification of
linen yarn drying on cross-wound bobbins." Izv.vys.ucheb.zav.;
tekh.tekst.prom. no.3:158 '63. (MIRA 16:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut legkogo i teks-
til'nogo mashinostroyeniya.
(Yarn--Drying) (Winding machines)
(Morozov, N.G.)

YAZYCHKOV, M. F. , starchy nauchnyy sotrudnik, kand. tekhn. nauk

Yarn drying on bobbins by means of hot air under pressure. Tekst.
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